THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. II.] Copyright, 1876, JAMES R. OSGOOD & CO. [NO. 67.

BOSTON, APRIL 7, 1877.

CONTENTS.

SUMMARY: —
The New York State Capitol. — Security against Earthquakes. — Fire-Proof Buildings. — Trades-Unions again. — The Ex-Empress's Claim to the Art Collections at Pierrefonds 105
NEW PUBLICATIONS 106
M. VIOLLET-LE-DUC AND MODERN ARCHITECTURE 108
THE ILLUSTRATIONS: —
Cottage at Long Branch. — Halls at the "Hawthorns." — Details of First Church, Boston. — Academy, Owatonna, Minn. 109
PUBLIC SCHOOL BUILDINGS AT CINCINNATI 109
CORRESPONDENCE: —
Letter from Chicago 110
L'INSTITUT DE FRANCE 111
ARCHITECTS AND THE PUBLIC 112
NOTES AND CLIPPINGS 112

THE question whether the New York State Capitol shall, after all, be finished according to the plans now adopted by the Advisory Board, was some time ago referred to the finance committee of the State Senate. A majority of the committee have submitted a report in which they record their opinion "that it was not intended or expected by the Legislature creating the present commission that the style of architecture should be materially changed. The Legislature [they say] desired to cheapen the cost of construction, if the same was practicable without lessening the beauty of the structure." They add, "The project of the Advisory Board is radically defective, not only in design, but in the treatment of the material used, — granite. The extravagant, not to say wasteful, cost of such incised and polished work as is contemplated in the 'modified design,' especially in any such material, is inappropriate to say the least, and forms a marked contrast with the bold and noble features of the existing work, where the architect has displayed great ability, especially in his treatment of the material." The estimates they report for finishing the building according to the new plans and those of the former architect are as follows: —

Amount reported according to the new plans for the completion of the entire building, including approach, stairs on east front, without terrace . .	$4,386,337 76
Cost of terrace	851,097 00
Total	$5,237,434 76
Old plans, entire building complete, including all the terraces, &c.	4,245,222 00
Difference in favor of the old plans . . .	$992,212 76

But it does not appear that this allows for the cost of removing the work which has been done under the Advisory Board, and of restoring the building to the condition for which Mr. Fuller's estimates were prepared. Notice has been given that a minority of the committee will submit a report dissenting from that of the majority.

AT a late meeting of the British Institute of Civil Engineers, there was an interesting discussion on the best ways of building for security against earthquakes. One subject of the discussion was a contrivance, called aseismatic, adopted in Japan, at the recommendation of the English Trinity Board, in the construction of light-houses, wherein the illuminating apparatus was supported on its platform by bronze balls rolling in sockets or cups (see Vol. I. p. 124), so as to break the transmission of a jar or oscillation from the earth. The contrivance was a clever one; but unluckily the Japanese keeper, getting tired of the instability of his apparatus, lashed it firmly to the platform, so that when the earthquake came, the shock was communicated and the apparatus deranged, and the test of the invention thrown away. It will be remembered that in Japan, partly at least on account of the frequency of earthquakes, the system of building is very slight (see Vol. I. p. 26). Houses are all of wood, and the roofs, the only solid parts which are firmly braced, are supported on light wooden posts without braces. These answer very well the purpose of the bronze balls in the light-house apparatus, and hardly transmit the shock to the roofs. When now and then they are shaken down, the roofs fall unbroken, and lie on the ground like hats. The few photographs of Japanese masonry that we have seen show it to be exceedingly massive, laid in large blocks of stone, with a strong batter, and with the beds of the quoins not horizontal but inclined downward from the angles so as to be normal to the sloping arrises; whether the rest of the coursing is horizontal, or all the beds inclined inwards, could not of course be seen. It is not impossible, however, that this masonry was the work of foreign engineers.

THE natural conclusions from the discussion were, that buildings to resist earthquakes must be built either of light and tenacious frames of wood or iron, free to allow a certain "working" as in the frame of a ship, or else of masonry so solid that though it may be cracked, no probable shaking will overthrow it. A wrought iron sea-pier was cited, built in Peru, half a mile long, and set on screw piles, which six years ago endured without injury the violent earthquake that destroyed the neighboring town of Arica; and also a building of like construction which had lasted through the earthquakes of twenty-five or thirty years. The solid masonry of Italy was instanced, which withstands with slight injury the heavy earthquakes that are common in the neighborhood of Vesuvius. In our own earthquake country of California, the habit of building has commonly been of the slightest, excepting in the government buildings, which are very solid. The tall chimney of the branch-mint in San Francisco was intended to be of massive masonry cribbed about with iron plating. We have no means at hand of knowing whether this construction was carried out. One curious occasional characteristic of the earthquake movement is what would seem to be a sort of rotary vibration. There was mention in the engineers' discussion of a case in Japan where the upper part of a chimney had been revolved upon the lower, and was left standing diagonally on it. This is corrobated by the case which was once described to us of the cathedral of one of the South American capitals which has suffered from an earthquake. The cathedral was built of *adobe*, and had triangular pinnacles, strengthened by running an upright wooden post or dowel through them. One pinnacle was dislocated by the shock, and the upper part of it revolved about its dowel through an arc of sixty degrees (or a multiple of it) so that its arrises stood over the centres of the faces below. We think an analogous case was noticed in a chimney at San Francisco after the great earthquake of a few years ago.

AN article in the *International Review* contains some sensible remarks for ordinary readers about fire-proof building. It reminds them that iron is a treacherous material when exposed to great heat; that to insure its safety when there is fire about it, it should be cased in non-conducting and incombustible material; that so incased wood is nearly as incombustible as iron; and that a great source of danger in ordinary buildings is the continuous openings, like flues, between the joists and furrings. It repeats the suggestion we have often heard of late, that floors should be laid with wooden beams incased in plaster, cement, or other incombustible. The popular discussions of this subject of fire-proofing are apt to overlook two considerations. The first is that we are trying to accomplish our end without paying its cost; and though it cannot be said absolutely that we never shall succeed, the attempt is rather a desperate one. We wish to put combustible materials with incombustible because they are cheap, and to prevent their burning; and while we are trying to accomplish this paradoxical aim, we neglect the obvious way to safety. The combustible materials are also the weak and perishable ones; those that will burn will decay. Whenever we are willing to look upon building-investments as those in which permanence is important, and make our structures to last as long as possible, we shall be in the way to make them stand fire. Certain obvious precautions will add to our safety without materially altering our ways of building. Such are the omission or closing of the flues between our furrings, and the exposing

of floor-beams instead of ceiling beneath them; but these things have their disadvantages, and they do not make fire-proof buildings. In the propositions for casing wooden beams in stucco and the like, we have not much faith. If the wood is embedded in them we invite dry-rot, and our floors are likely to come down some day as did certain warehouse floors in New York lately, without warning. Whether imbedded or not we know of but one available material to cover them, — terra-cotta — which is not friable under heat, and which might not be expected to shatter and fall away if exposed to a fire hot enough and long-continued enough to endanger an iron beam; and we doubt if even terra-cotta could be made secure under such circumstances. All such materials make floors extremely heavy, and so are likely to increase the cost of them to that degree that it seems better to go farther in search of less equivocal security.

The second consideration is that there are two kinds of fire-proofing required for two classes of buildings, and it is only the less important kind that there is any difficulty in securing. The one class of buildings includes those that are safe unless they themselves take fire, — dwelling-houses, churches, public buildings, halls, and the like; buildings that do not contain enough of inflammable contents to destroy them if they themselves will not burn. These are a very great majority of buildings; and many ways of building them so that they are safe against fire are in use, at hand for everybody who will adopt them, and at a cost which is not considered unreasonable anywhere but in the United States and in England. The other class includes those, such as warehouses and workshops for the storage or manufacture of inflammable goods, which are liable to be destroyed by the burning of their contents. The fire-proofing of these has not yet been satisfactorily accomplished: to make them secure by the means at present in use, is to make them unreasonably costly and inconvenient. But they are comparatively a small part of our buildings. The means of making our cities safe from fire are available; and now that we have come to spend as much as we do on their looks, it is not reasonable to say that we cannot afford to use these means. It is not so easy, it is true, to make our houses impregnable against such fires as swept Boston and Chicago; but if our city laws insisted on the fire-proof building that can be done, such fires would never occur. Where no building burns from within, we may be sure that none will take fire from without.

We alluded last week to the proposition of Messrs. Schofield & Co. of London, to their fellow-employers, for the establishment of a bricklayers' workmen's union, to take the place if possible of the existing trades-union. The suggestions of the Messrs. Schofield, which have been published, are as follows: that the employers shall establish a fund for the support of the new union, to the maintenance of which the workmen shall contribute weekly payments, as they do now to the trades-unions; that to every workman shall be conceded (by the union, we take it) the right to work when, how, and as long as he likes; that all rules for the administration of the union shall be fixed by the workmen. Any undertaking of this kind will be watched with interest here, where conflicts between employers and workmen have become uncomfortably common. The essential point in the scheme, so far as the employers are concerned, is the provision which allows every workman to work "when, how, and as long as he likes," — that is to say, for what wages and what hours he will, we suppose. This is obviously intended to prevent compulsory striking, picketing, and rattening, and in respect of their freedom to work would put members and non-members on the same footing. How far this project, if the masters assume to carry it out, will be found attractive to the workmen, remains to be seen. They have commonly been found ready to sacrifice their personal freedom for the power of controlling each other; and to induce them to give up this power will probably require some prospect of marked advantage, especially against the influence of their leaders. The provision of a fund by their employers may or may not be enough for this, — the amount of it will have something to do with the question, — but we should think there was room for considerable precaution to prevent the workmen from capturing the fund and the union, as politicians have been found to do in this country with reform conventions, and "running" both in their own interest. We are glad to learn, by the way, that the engineers of the Reading railroad have decided almost unanimously to withdraw from the Brotherhood, rather than forfeit their positions on the road. This will be a heavy blow at the most mischievous trades-union in the United States.

Most persons who have followed the exertions of the few mediævalists among French architects, and many others, know the old Château de Pierrefonds, which, purchased as a ruin by the first Napoleon, became a pet of the second, and whose skilful restoration by M. Viollet-le-Duc has made it famous. A valuable collection of old armor, got together by the late emperor, was displayed in the great hall of the castle, and was one of its chief attractions to visitors. The empress had on her part formed a collection of Chinese bronzes, porcelains, and other curiosities, which formed the Chinese Museum at the palace of Fontainebleau, and which consisted mainly of presents made her by other sovereigns or their representatives, and by the commander-in-chief of the army that in the late Chinese war pillaged the summer palace of the emperors.

The imperial family entered a claim five or six years ago for these two collections, on the ground that they were private property. M. Thiers, then president of the republic, and his ministry, after referring the claim to a special commission appointed to consider it, made an agreement in behalf of the government to pay the heirs for it something over half a million of dollars, it is said. A second commission, appointed by the Assembly, has since repudiated this agreement, and the matter has been carried into the courts. A curious question has been raised by the claimants with regard to the collection at Pierrefonds. An early decree of the second empire, made apparently in the interest of the imperial family, orders that objects of art placed in imperial residences at the cost either of the state or of the crown shall become the property of the crown; and this has been supposed to estop the claim of the imperial heirs. The claimants, on the other hand, maintain that the Château de Pierrefonds, having been rebuilt at the emperor's private expense, was not an imperial residence; and, more singularly, that the arms and armor collected there, having been made in their day simply as implements for use, are not to be considered objects of art. The general adoption of this theory would cancel the titles of a good many things besides arms and armor, and would be a painful blow to the enthusiasm of collectors. It would probably have been a considerable surprise to the imperial collector himself, to be told that he was not gathering objects of art at Pierrefonds.

NEW PUBLICATIONS.

A PARALLEL OF HISTORICAL ORNAMENT.[1]

To include a Parallel of Historic Ornament — or an historic parallel of ornament — within the limits of ten folio plates is a feat in condensation which a bold man might well shrink from attempting. It has probably been done as successfully as was practicable in the plates executed under Prof. Ware's direction by Mr. Heinzen, and published at intervals within the last year or two by Mr. Prang, which by virtue of judicious selection and arrangement are made to present an uncommonly interesting collection of ornamental illustrations, and a better conspectus of the various types of ornament in use from the earliest days to the latest, than we should have supposed could be exhibited in the space allowed. One of the ten plates is assigned to Egyptian ornament, one to Assyrian and Persian, one each to Greek and Roman, one to Byzantine and Romanesque, one to Arabian and Moorish, two to Gothic, and two to Renaissance. We notice a marked difference of character both in arrangement and execution between the first two plates and those that follow, which sug-

[1] Parallel of Historical Ornament: A Selection of Prominent and Characteristic Examples in the Different Styles, arranged so as to present both in form and in color a Comparative View of their Principal Features. Prepared under the Supervision of William R. Ware, Professor of Architecture at the Massachusetts Institute of Technology, and at the Massachusetts State Normal Art School. By Karl F. Heinzen, late of the Polytechnic School of Switzerland at Zurich. Boston: L. Prang & Co., 1876. Price $10.00.

gests that the directing hand must have been changed at that point. The first and second plates in fact appear to be little more than a selection of the familiar examples of Owen Jones and Racinet. But the others show a more considerate collection of materials from various sources. For the sake of systematic comparison the plan is adopted of giving first a series of capitals of different orders, periods, or nations in each style, then examples of running ornament, decoration of bands or mouldings, then surface decoration in diapers and panels, and all these when possible both in carving and color. Thus in the plate of Greek ornament we have two examples of columns in each of the three orders, a series of antefixæ, and other carved ornaments; enriched mouldings, then a similar arrangement of colored ornament first in bands and afterwards in panels, grouped about a drawing of a Greek vase. The Roman plate is arranged in like manner, excepting that as may be supposed, since no colored ornament is to be found, none is given. The two plates assigned to Gothic ornament give an opportunity to extend the system somewhat, one plate being given to carved and one to colored decoration. Here we have compactly placed in six parallel columns a series of English and French examples side by side; first carved capitals of each of the three principal Gothic epochs, then bases, then profiles of arch mouldings, then enriched mouldings, then bosses and rosettes, then carved diapers and panels. All these are so displayed as to give at a glance a comparison of the characteristic treatment of each feature at the different epochs in the two countries. In the second plate we have colored capitals of the different periods, on one side English, on the other French and German; colored mouldings and bands, diapers and surface ornament, and finally stained glass.

The care and method used in placing the examples has made it possible to give a greater number than could be expected, as many as eighty figures being shown on one plate without crowding or confusion. They cover a wide range; and much care has evidently been taken to have them interesting and typical without their being hackneyed. The substitution of the capital from the temple at Rhamnus for the usual Parthenon or Theseum is perhaps hardly an improvement; but the juxtaposition of the less familiar Corinthian capital from Didymæ with the standard example from the monument of Lysicrates is an advantage. The authentic colored Early English capital from the Architectural Museum at Westminster is an interesting example which has never, we think, been published before; and we doubt if many people even know that such a thing exists. It is an advantage to have the place-titles of the examples written under each drawing, as is here done, instead of having to consult an index. On the whole, we know of no collection of ornamental detail which has the same qualities of compactness and significance of arrangement as this; and if its compass is not great, it is for that reason more likely to be serviceable for purposes of instruction than the larger works, which are and must necessarily be very costly — a consideration that doubtless influenced the publishers in limiting it. We should have been glad, nevertheless, if they had allowed themselves one more plate, so that two instead of one might have been allotted to Byzantine and Romanesque ornaments. We miss, for instance, the characteristic cushion-capital — not a very decorative form in itself, but one of which there are ornamented examples, and the parent of a very large class of forms — and the equally characteristic capitals of interlacing bands and grotesques which are so abundant and significant in the twelfth-century architecture of Germany and some parts of France. More space here would have allowed examples of the transitional ornament of the end of the twelfth century, which, if not indispensable, is at least important in historical study, as well as interesting. Another important link which the limits of the scheme made it necessary to omit is the Græco-Roman ornament of Pompeii. The mechanical execution of the work has improved as it advanced. The earlier plates are inferior to the rest both in drawing and color, — done with as much neatness, perhaps, as the plates in the Grammar of Ornament from which the most of their material is taken, but with less spirit. The later ones are much better, not only in arrangement, but in color and printing. They are executed with admirable precision; and though they still leave something to desire in point of color, — as such prints always do for that matter, — they are without doubt, we should say, the best things that have ever been done in the United States in chromo-lithography. They are better than those of Owen Jones; and in fact, the only things of the kind that we can recall which surpass them are the famous plates of Racinet.

THE APPLICATIONS OF PHYSICAL FORCES.[1]

One is impressed at the outset with the attractive appearance of this book. It is a fit sequence and companion to the work on "The Forces of Nature," for which we are indebted to the same writers, and to their earlier predecessor, "The Heavens." The ease and simplicity of the translation are such that one might believe the work the composition of an English author. It serves a useful purpose in placing before the public in simple and intelligible language the evidences of how serviceable the great truths of science brought to light within the last fifty years have been made in promoting the commerce in arts, the industries, the comforts, and the culture of the world. There is a happy compound of the more amusing with the useful, and a scientific explanation of some of the marvellous tricks of conjurors, as well as of the serious labors of the man of science.

Beginning with the phenomena and laws of gravity, we have first the time-honored device of the plumb-line, and its application in the determination of angular attitudes; then the pile-driver. The latter as worked by a steam-engine is of comparatively recent invention. We should have been glad to see as the companion to the pile-driver the steam-shovel and dredging-machine, two of the most important labor-saving machines of modern times. Possibly they would have been more appropriately placed under the head of the Uses of the Steam Engine; but there we look for them in vain. The pendulum and balance, the hydraulic press, the hydrometer, the level, and the philosophy of fountains and pumps, are admirably presented and illustrated. It is evidently not always the purpose of the author to present the latest and most complete forms of apparatus for particular purposes, but rather to exhibit a form which admits of ready illustration without overtasking the comprehension of the average student.

Nothing could be better than the illustrations of the uses of compressed air, as shown in the drilling of the rock for the Mont Cenis tunnel, the pneumatic tube for letters and for railway trains, and the sinking of piers for bridges. We are introduced also to the offices of the balloon during the Paris siege, sending out altogether in fifty-four balloons 2,500,000 letters. A gentleman whose family was sent out of the empire while he remained inside the walls of the city has informed us that he sent a letter to his family by nearly every balloon, and that with one exception every letter reached its destination. The mode of returning letters to the city by the use of carrier pigeons taken out in the balloons is described under the head of Photography. The communications to be sent to the city were photographed in characters of great minuteness upon thin sheets of collodion. These sheets were carefully rolled up, and placed within small quills which were tied to the tail-feathers of the carrier pigeons. On the arrival of the birds at the dovecote in the city, the quills were opened, and the sheets of collodion spread out on glass, and this with the aid of a microscope and camera and oxyhydrogen light thrown upon a screen, where reporters copied the communications. Optical instruments receive their due share of attention, and photography and its derivative arts are discussed in detail. So also are the applications of heat. The various forms of the steam-engine are described; and a good many inventions in which the steam-engine is only the motor are given under the heading, Applications of Steam. The many recent applications of electricity naturally occupy a considerable space, and the electric telegraph is treated at length.

The chapters on Sound are among the best in the book. We turned with hope to see how the author had treated the vexed question of acoustics applied to architecture, and though we failed to find what we wanted, we had the satisfaction to find that the writer appreciated the difficulties of the question. Public-assembly rooms he divides into three classes, — the concert-room, where the orchestra or the speaker is placed, or should be placed, in the sound focus, and where every thing is subordinate to the wants of the auditor; the theatre, where there must be two sound foci — one for the orchestra and one for the actors; and third, the hall for deliberative assemblies. It is not without surprise that we read that the walls of an auditorium should be "smooth, and their surfaces resisting and polished; large projections, ornamental masses, or excrescences, must be avoided," — maxims which, though they would undoubtedly favor great sonorousness, we hold to be removed by celestial diameters from the principles that must be observed where clearness of articulation is aimed at. Mr. Lockyer, however, quotes in a note on this passage an opinion of Gen. Scott, the designer of the Albert Hall, in opposition to this theory. A remark significant for architects is that the reason why experiments to determine the proper acoustic treatment of halls have not succeeded is doubtless that "the architects who have tried them were more engrossed with the question of art than with that of

[1] The Applications of the Physical Forces, by Amédée Guillemin. Translated from the French by Mrs. Norman Lockyer, and edited, with Additions and Notes, by J. Norman Lockyer, F.R.S. With Colored Plates and Illustrations. London: Macmillan & Co., 1877. Price $12.50.

science; perhaps also the want of special knowledge has a great deal to do with this almost general failure." To this it may be added in fairness that the experiments necessary to settle the question are in the nature of things somewhat costly; that the persons for whom halls and theatres are built are not willing to pay for experiments, and that the architects cannot afford to.

There is no natural limit to such a work as this, nor any criterion other than individual judgment for what shall be included and what left out of the endless variety of subjects that might be admitted. Probably any reader may think of something which he would have added; but we were somewhat surprised at the absence in the discussion of telegraphy, of any mention of the electric telephone, an invention which has been the study of many electricians, and which has already yielded results of so great interest and gives promise of so great usefulness. Nevertheless the amount of material and the number of appliances that have been introduced into these seven hundred pages will excite the reader's surprise, and make the work a valuable one to persons who wish to be well informed of the general range of scientific invention, without keeping up the studies of the specialist. How much Mr. Lockyer has added to the work, it is difficult to judge; there are evidences not only in the notes but in the body of the work that he has done more than merely supervise the translation. Its dress and appearance are as handsome as might be expected by those who know the previous works of M. Guillemin. The paper and type are the best of the English press. The two colored lithographs are not excellent, but there are two very good colored etchings from microscopic drawings; and the wood-cuts, excepting a few English ones added by the editor, which are easily recognizable for their inferiority, are of great splendor.

M. VIOLLET-LE-DUC ON MODERN ARCHITECTURE.

[Translated from the Revue Générale de l'Architecture.]

The nations of the earth who have created an architecture remarkable for its permanence are not always those possessing the strongest elements of vitality.

Man is only the better fitted to conceive durable work, in proportion to a deep sense of his own frailty. One might say it is the consciousness of his weakness, of his transitory state, that induces him to leave behind these imperishable marks of his existence. He protests in this way against the destiny which allots to him but a few paltry days of life on earth. The history of the world furnishes us with but too many examples of this contrast.

Asiatic civilization, disappearing before we are able to link the chain of its existence to that of modern times, has left behind it monuments of everlasting stability. Egyptian civilization is a thing of the past, extinguished without noise or glory. Buddhism, the creator of those stupendous structures intended to defy the effort of ages, is little else than a dogmatic nihilism fit only to lead humanity to a slow and obscure death, without hope of resurrection. From the hour that the Roman Empire set to work on the vast piles of masonry familiar to us all, its days were numbered.

The more powerful the collective action which rears these colossal masses, the feebler becomes that individual sentiment without which a civilization can neither progress nor hold together. So long as men remain possessed of great vital energy, they do little in the way of building, . . . beyond the demands of immediate necessity. But from the moment they dream of founding those selfish and defiant piles of masonry which assume to perpetuate through centuries the trace of their existence on earth, they begin to lose this vital energy; and it is safe to say that the monuments built in the conceit of being indestructible really become the last will and testament of a people.

Europe in the nineteenth century (confining one's self strictly to architecture) finds itself confronted by two opposite principles. On the one hand, by the Roman or Latin tradition, urging it to build structures expressive of illimitable duration; on the other hand, by that vital modern principle which commands it to build with the view of simply satisfying the wants of the moment. Hence appears this strange contrast (perhaps now evident for the first time in the course of ages) of an architecture whose elements cling to the past, and even exaggerate them, side by side with an art aiming only at the immediate satisfaction of public want, economical and rigorous in its nature, but subject still to the changes consequent on every new phase of society.

Certainly France is the country in Europe where these questions come up with the greatest force. Born amidst the traditions of Roman antiquity, she possesses to a greater degree than either Italy or Spain the means of reproducing its forms; but at the same time her industrial and commercial activity compels her to ignore the conditions under which the monuments of the Roman Empire were constructed, and to consult only immediate necessity.

This is so true that directly fronting an edifice built of massive blocks of cut stone (where the richness of workmanship vies with and even exceeds the value of the material, where forces are lavished as they were at a period when man understood but imperfectly their value) we see going up constructions in which an exact appreciation of strength of material, a just comprehension of immediate needs and of the employment of resources, with a due regard to the requirements of an essentially useful enterprise, have obliterated these traditions of a civilization without analogy to our own.

This art of architecture, then, has a double existence; on one side it clings to the past, on the other it strikes out independently into the future. With a little more philosophy in spirit, architects might manage a transition style, or at least agree on a compromise between bygone forms and the new ones now called into existence by modern progress and all that goes to make up an enlightened age. Unhappily they have not so construed their part: on the contrary, far from endeavoring to unite in any way the two factions, we find a great majority of professional men working back against the current of events, and even exaggerating faults in the art of building which have been charged to the Romans of the Empire, . . . prodigal use of material without reason, total disregard of economy, and the like. In this school of so-called "Renaissance," iron is employed both with brick and stone, these last two materials being frequently made to mask the supports and construction of the former; or in other words, it is easy to see that the public pays for *two* buildings instead of one.

Again, in our time marble walls are not "backed up" with brick and rubble of an economical character as in the days of the Romans, but with the best and most costly stone; even leadwork is managed so as to imitate *wood*, though at great expense. And again we see iron made to carry enormous lintels ceiled in plaster, and boxed out of sight, making evidently additional bills from mason and iron-monger.

But this "*Art of the Future*," as those who put it in practice have been pleased to term it, is evidently too costly to satisfy a society building only for its daily use, and caring little, above all, to astonish future centuries by the perpetuity and extent of its work in stone. The "*Art of the Future*" will be more modest and less ruinous in its visible effects, more useful in its immediate results.

The mistake of architects is in always presuming that we live under the Antonines, Ptolemies, or Assyrian monarchs, — a sufficiently excusable blunder, it must be admitted, since there is hardly a tendency regarded so disastrous by our present architectural chiefs, as a *desire for analysis of form out of rational principle*.

The greatness of a country is partly measured by its monuments. Very well. The question then arises, Is the secret of this power or greatness, artistic merit, or mere stability?

Secondly, another question may be put: Are the conditions which made up the strength of the Roman Empire two thousand years ago, the same to-day?

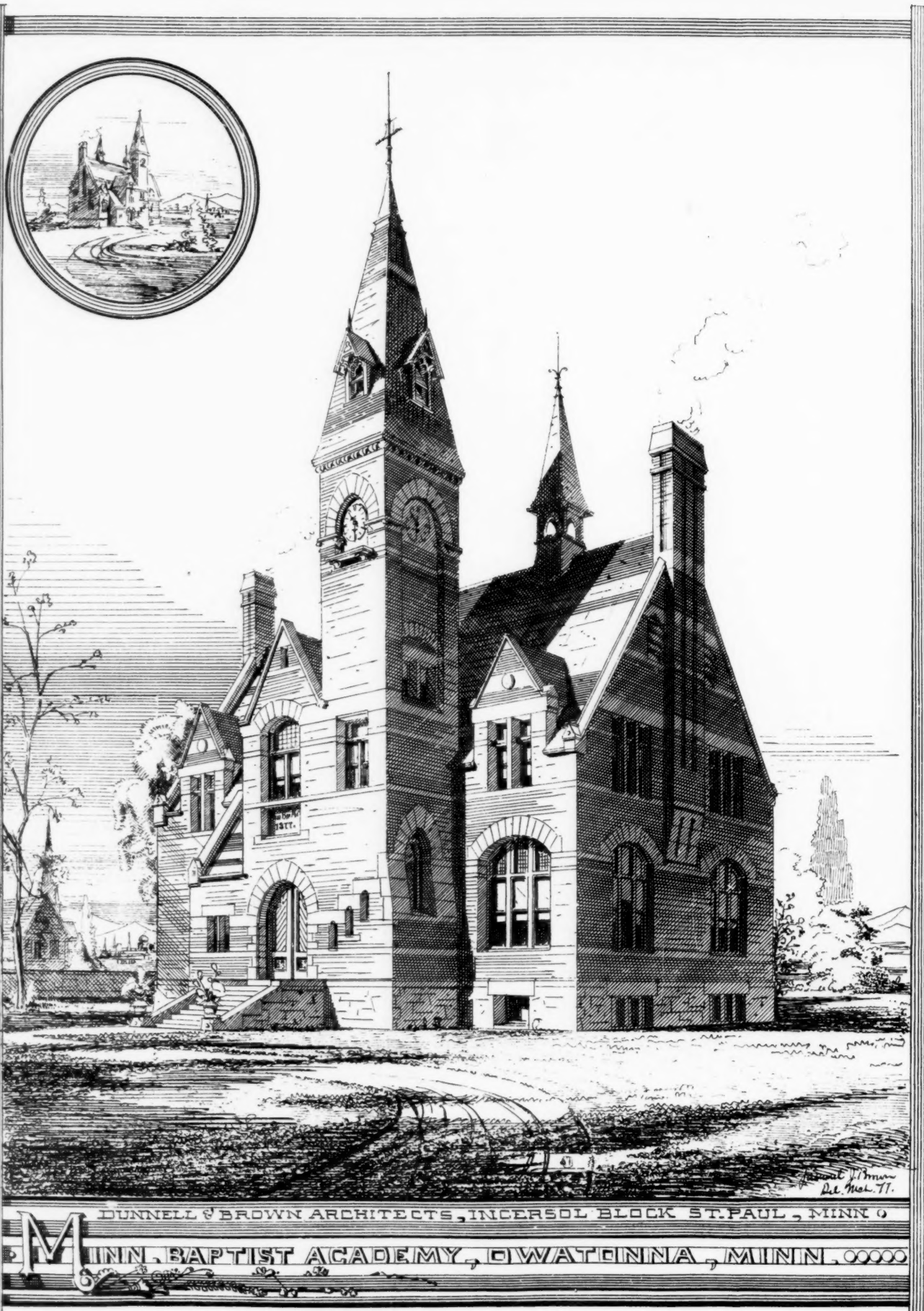
Let us state some differences which have their weight; and without looking up the Assyrian kings, the Pharaohs, or Ptolemies, let us consider simply the Romans, from whom we have borrowed so many things, . . . our language among others. The Romans under the Empire became masters by conquest (and through other less glorious means) of nearly the entire surface of the earth known at that time. Into their hands poured all the wealth of the West and of a considerable portion of the East. Exacting tax-masters, epicures of the most confirmed character, their days were numbered from the first indication of a falling off in revenue. Again, their political policy, from the time of Augustus, aimed solely to draw within the gates of Rome whatever the earth could produce in men of all races and wealth of every description. That a nation thus constituted, possessing twice as many slaves as it counted citizens, entirely independent, and without any restrictions whatever, should build monuments like those with whose ruins we are familiar, is easy to understand; and these structures are precisely indicative of a proud and selfish government. But even admitting this hypothesis, these monuments are constructed on economical principles; nothing wasted, nothing lost, every thing conforming to the means which lay in the power of these indefatigable builders. Indeed, such are the points of contact of this civilization with our own, that Louis XIV. is said to have once attempted the rebuilding of the works of the Empire in the firm conviction that he was a legitimate Roman emperor.

This is excusable perhaps in a bygone age; but we, men of the nineteenth century, where are our slaves, our serfs? Where are the tributaries to send us precious woods, metals, and marbles? Where are the foreign powers entreating to be ruled over by our proconsuls? Where are the "colons" to cultivate our lands? Where are the armies to leave behind roads wherever they pass, like a ship tracing an indestructible wake?

The monuments of Rome stand as undoubted proofs of its grandeur. Our glory lies in altogether different channels: hence the buildings which mark its progress should be constructed after other principles; and this is evident were we but possessed of the smallest dose of common sense.

Our greatness, or to speak more truly, the greatness of modern civilization, consists in the relations between immediate wants and the means of satisfying them, — between the demand and supply. Let it be well understood that I am speaking now not only of industry and commerce, but of all that constitutes the social state, intellectual and material.

To illustrate: Material prosperity increases, provided the desire for it can command a corresponding return from industry and commerce. In the same way the intellectual standard rises, if instruction, for example, be sufficiently advanced to satisfy that need of learning which makes itself felt among the masses. If you were to teach the catechism only — and stop there — to peasants

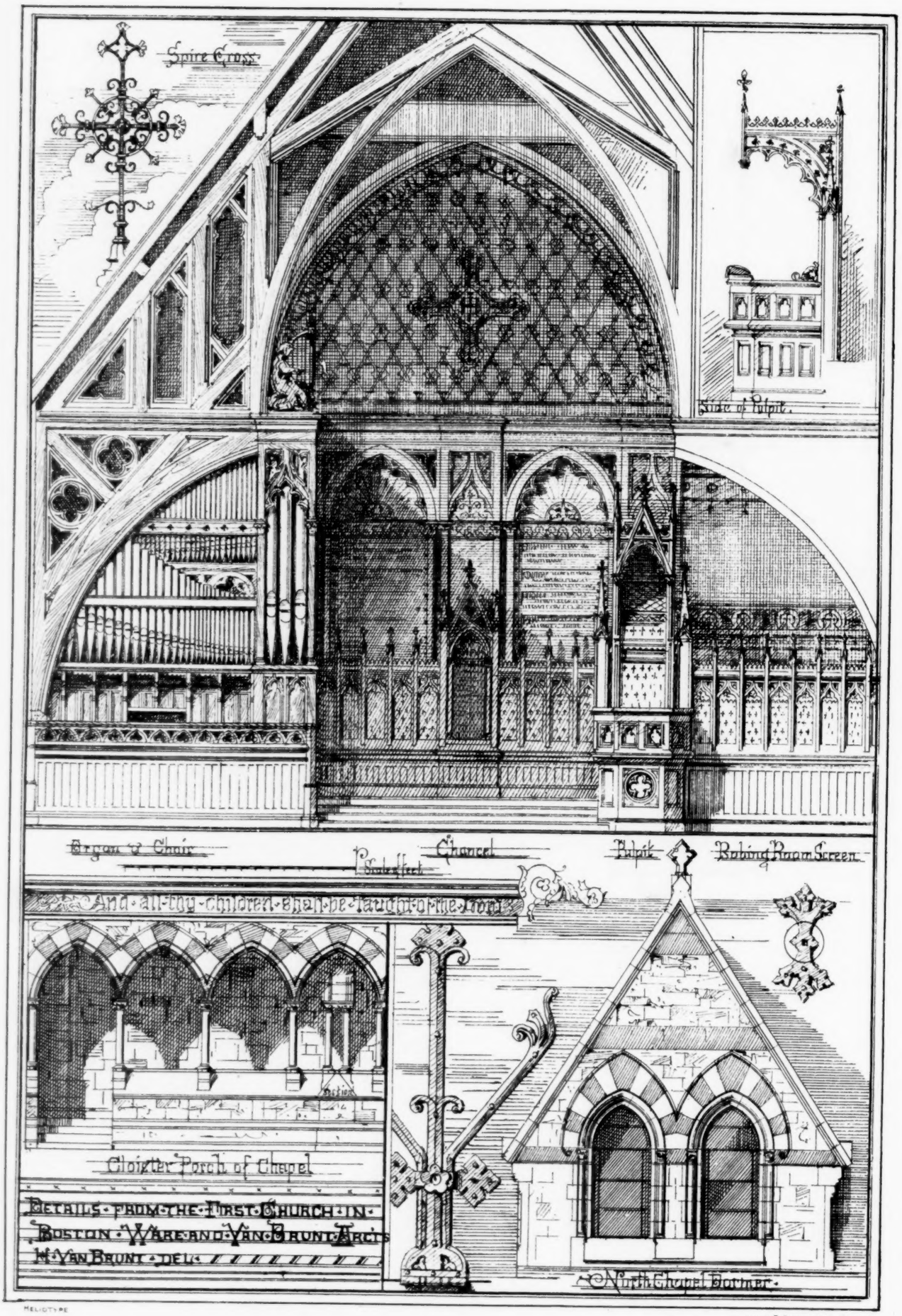


DUNNELL & BROWN ARCHITECTS, INGERSOL BLOCK ST. PAUL, MINN.

MINN. BAPTIST ACADEMY, OWATONNA, MINN.

HELIOTYPE

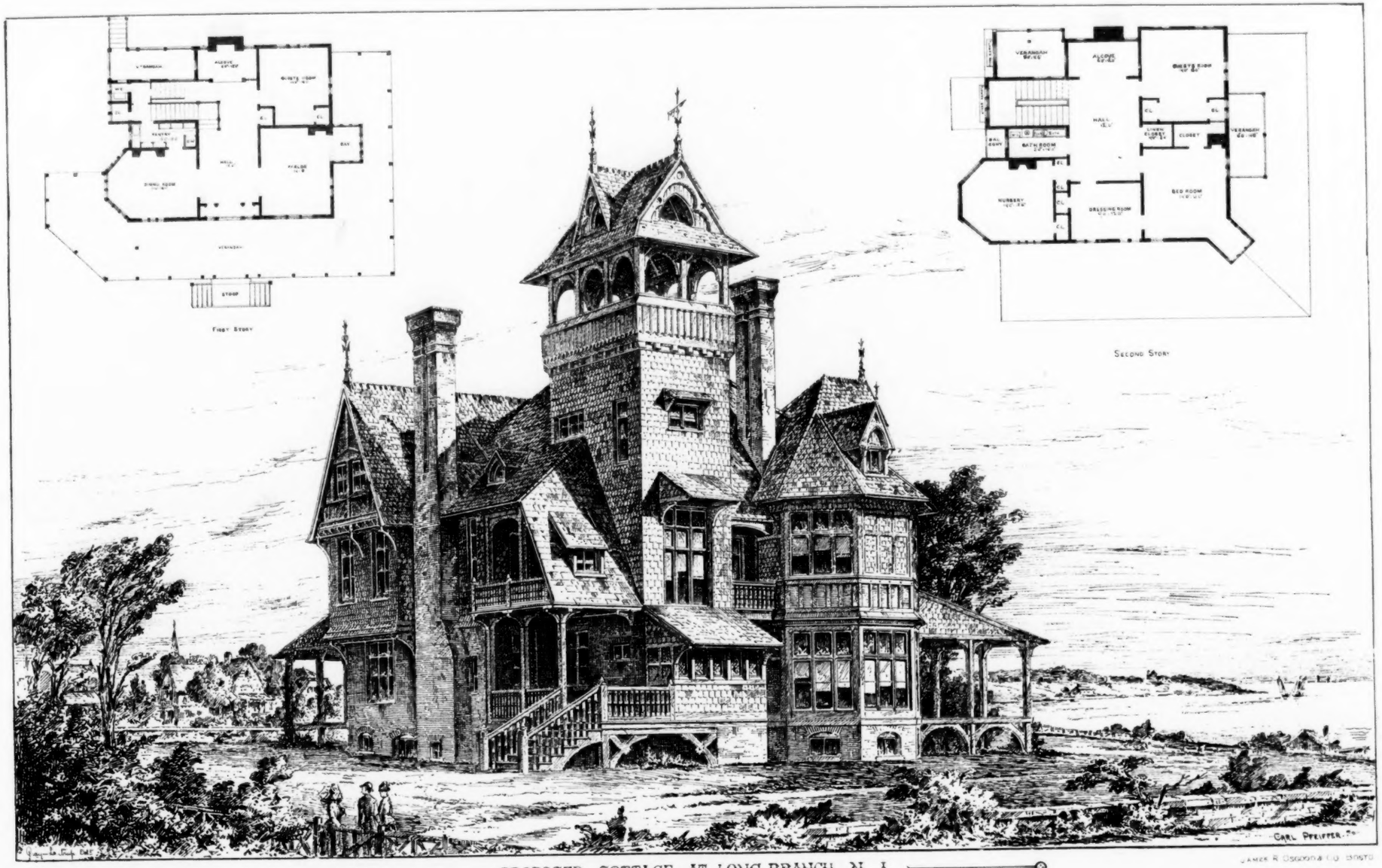
JAMES R. OSGOOD & CO. BOSTON



DETAILS FROM THE FIRST CHURCH IN BOSTON. WARE AND VAN BRUNT, ARCHTS
H. VAN BRUNT, DEL.

HELIOTYPE
JAMES R. OSGOOD & CO. BOSTON

American Architect and Building News April 7. 1877

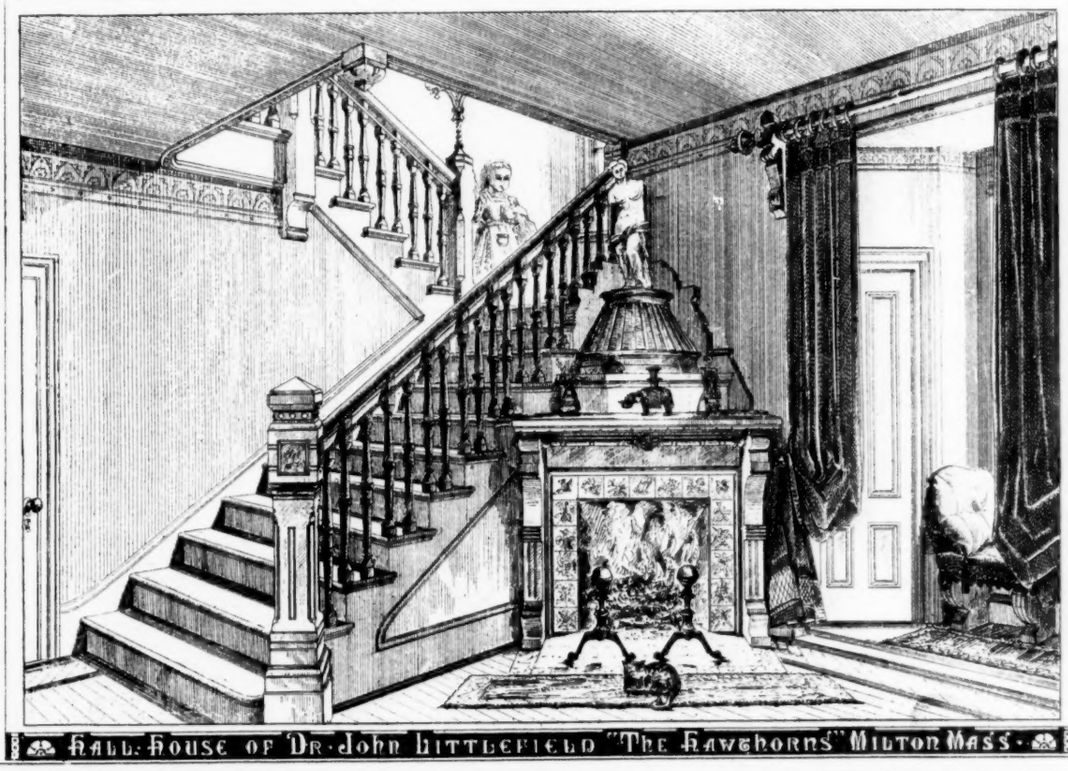


PROPOSED COTTAGE AT LONG BRANCH N.J.

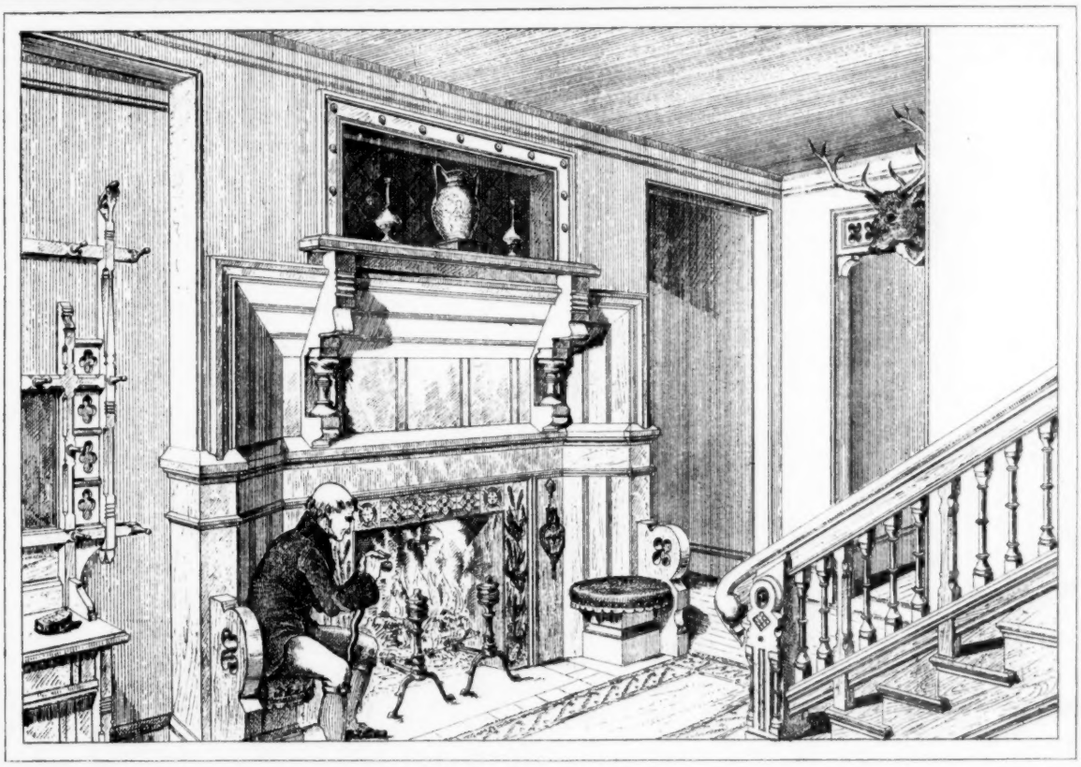
CARL PFEIFFER ARCHT.

HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON



HALL: HOUSE OF DR. JOHN LITTLEFIELD "THE HAWTHORNS" MILTON MASS.



HALL HOUSE OF GEORGE T TILDEN. "THE HAWTHORNS" MILTON MASS.

and laborers, who need to know the elements of chemistry, physics, and mathematics, evidently the land would gain nothing, and labor would go down hill. And now (to enter more directly into our subject) if we were to instruct architects and the men of kindred branches, in none but the forms of art as practised two thousand years ago, would we not leave them outside the pale of modern society, and ignore the claims which it has a just right to impose upon them?

If you choose to regard schools of art as so many seminaries established by society to foster only traditions foreign to modern intellectual and material development, you act wisely in confining instruction to the study of certain periods of art; but if, on the contrary, we deem it necessary to raise up for ourselves architects who will labor conscientiously to discharge the duties marked out for them by society, we must of necessity submit to educate them in the principles upon which this society rests, and in what it requires.

Certes! The language of Bossuet is very fine; but if we undertook to compel literary men of our day to employ none but the forms of speech, the words, phrases, and even manner of Bossuet, they would present a poor appearance if called upon to explain or analyze certain phenomena discovered in our century.

Let poets, painters, or sculptors, write, paint, or chisel as in the time of Francis I. if they can: that is their look-out, they are responsible only to themselves and their works; the public purchases and regards these works, or leaves them with the print-dealer or in the studio. But with architecture it is different, — above all, architecture applied to public monuments.

Whether they please or no, whether the conditions are complied with, whether the funds expended in their erection be greater than the usefulness really obtained in return, they are bound to be paid for all the same; *and it is the public that has to pay*, satisfied or not.

It is folly for an architect to say that it is not for him to follow the multitude, but for the multitude to follow him; or that he wishes to lead it, guided by his own inspiration. It may be allowed Mr. X, . . . painter or sculptor, to work after the manner of Michael Angelo, so long as he buys his own canvases, his colors or marbles; but we cannot consent to this sort of thing in the nineteenth century when architects are paid from the State budget, . . . that is, out of every man's pocket. Let no one mistake my meaning.

We admit that the architect is not bound to regulate his convictions and principles by every whim of economy that happens to possess the public or those who represent it; but at the same time while maintaining his ground firmly he should have sufficient sense and judgment to measure his expenditures according to the nature and extent of the work in hand. These considerations in our mind overstep all others, for they alone make the architect other than a mere speculator or frivolous artist, placing his own vanity before the interests of all.

One of the points most worthy of admiration in the architecture of the Greeks and Romans (though entirely unlike in themselves) is the exact measure of *means employed* in proportion to the importance and destination of the building in hand.

It is the sincerity of the constructor who cannot deceive as to the value of the material employed, and who uses his resources with economy, that is to say, proportionally to the importance or requirement of the programme.

Architects who wish to study these arts (Greek and Roman) from this point of view do well, and may learn much that could be practically turned to account in our own time; but in order to do this properly they should be deeply impressed at the outset with a sense of the requirements of modern society.

These requirements are of two kinds: on one side they are purely physical, they depend upon the nature of materials furnished by modern industry, and upon their uses, quality, and market value; on the other side they have a more elevated character, and proceed from a desire for what is truthful, sensible, methodical, exact. And it may be said here, that great progress has already been made in the public mind notwithstanding persistent efforts on the part of many professional men, who dare to regard this same public as an infant to be amused with playthings and gewgaws.

It cannot be allowed any professional body to-day, having to deal with public interests, to hide its responsibility behind a worn-out dogma, or to act without giving in return some account of the motives which govern it.

But to speak the truth, it should be the public's own business to make known its wishes, and say what it wants.

True, it has been held in absolute ignorance of all architectural forms, has been taught even to believe that architects obey certain mysterious rules known only to themselves and the initiated; but has it been always thus? Can we not find certain epochs during which the public, on the contrary, without being made up of architects, lived with its architecture as we live in the garments that clothe us?

It must be admitted that these questions have their importance.

Far from believing that in our day it is the artist's business to guide public taste, and to dictate opinions, I hold on the contrary that it is for the public to manifest a taste and an opinion in consulting its proper judgment, independent of the affectations and prejudices of schools.

There is a great future in store for us. Let every man open his eyes.

THE ILLUSTRATIONS.

DESIGN FOR A SEASIDE COTTAGE AT LONG BRANCH. MR. CARL PFEIFFER, ARCHITECT.

(113 Broadway, New York, N.Y.)

It is proposed to build this house at Long Branch. The basement and first story to be of brick, the second story and attic of frame work covered with slate on the outside. The basement is to contain the kitchen, laundry, storerooms, etc. The interior walls of first and second stories are to be finished with wainscoting from floor to ceiling. The ceilings will show the beams and finish with wood panelling.

DETAILS OF THE FIRST CHURCH, BOSTON, MASS. MESSRS. WARE AND VAN BRUNT, ARCHITECTS.

(2 Pemberton Square, Boston, Mass.)

DESIGN FOR A BAPTIST ACADEMY AT OWATONNA, MINN. MESSRS. DUNNELL AND BROWN, ARCHITECTS.

HALLS AT THE "HAWTHORNS," MILTON, MASS. MR. G. T. TILDEN, ARCHITECT.

(29 Pemberton Square, Boston, Mass.)

PUBLIC SCHOOL BUILDINGS AT CINCINNATI.

The forty-seventh annual report for the school year ending Aug. 31, 1876, has just come from the printer's hands; and we glean therefrom items that will be of considerable interest to architects as matters of reference. We find that the Board have spent this year for new buildings, repairs, and heating apparatus, about $115,000. Two new buildings have been erected costing about $52,000.

We give below a detailed statement of the number of buildings, seating-capacity, etc. There are 38 school-buildings, with an average lot of some 30,000 square feet. The total amount of property amounts to 29 acres. The average number of rooms per building is 15; average seating-capacity per building, 760; average cost per building, $32,500; average cost per room, $2,100.

District.	Cost of Building.	No. of Rooms.	When Built.	Seating Cap'ity.	Size of Lot in Feet.	Cost of Lot.
1st	$76,300	21	1867	1,212	100 x 210	$5,000
2d	58,500	19	74	852	99 x 200	9,000
3d	23,800	14	54	732	92 x 180	5,200
4th	52,000	10	68	522	143 x 180	30,000
5th	34,700	19	59	956	90 x 170	14,000
6th	36,000	24	56	1,424	90 x 198	2,400
7th	8,800	14	35–50–55	596	60 x 200	8,400
8th	27,900	21	35–65	1,131	61 x 150	4,200
9th	18,900	12	35–62	710	60 x 120	6,700
10th	20,700	20	46–58–68	1,050	80 x 170	3,800
11th	63,900	24	44-55-65-72	1,480	110 x 200	37,800
12th	25,600	18	58	1,108	116 x 330	9,800
13th	21,400	22	52–63	1,252	90 x 200	23,200
14th	35,600	21	51–60	1,240	146 x 275	15,300
15th	30,400	24	61–69	1,450	2,550 sq. ft.	6,200
16th	23,900	10	55–67	567	110 x 330	16,000
17th	11,600	8	58	426	200 x 330	8,000
18th	6,700	10	69	500	180 x 260	9,000
19th	12,900	6	60–71	298	143 x 400	13,900
20th	72,700	21	69	1,056	109 x 243	18,200
21st	50,200	19	72	970	152 x 300	12,700
22d	75,700	18	72	927	230 x 215	
23d	.....	9	.....	462	102 x 150	1,600
24th	14,300	8	62–71	348	100 x 164	
	42,800	8	76	394	120 x 340	12,500
	16,000	4	72	184	4 acres.	
	37,600	11	76	612	190 x 200	6,000
	7,800	4	.....	200	205 x 155	3,700
	9,700	9	51–67	464	110 x 300	1,000
Intermediate Sch'l.	33,300	18	54–67	977	210 x 400	18,500
	25,400	18	62	916	80 x 153	24,000
	85,500	22	70	1,016	152 x 100	12,600
	25,400	20	62	1,064	250 x 195	35,400
Woodward H. Sch'l	61,200	11	54–57	450	215 x 220	
Hughes High Sch'l.	23,400	11	53	482	90 x 200	
Colored Schools	12,000	11	59–66–68	450	84 x 130	12,800
	8,000	7	58	200	60 x 90	5,000
	20,300	8	72	200	60 x 200	3,700
Totals	$1,200,900	554		28,885	29 acres.	$394,800

Of late years the cost of the buildings has been about $3,000 per room. Of all these 38 buildings there is not one that has any great claim to architectural merit, they having been for the most part designed by the superintendent, and if an architect has been consulted it was to act merely as draughtsman.

Stewart's Hotel for Working-Women. — It is said that Stewart's Hotel for working-women will be ready for occupancy during the coming autumn.

CORRESPONDENCE.

THE SEWAGE SYSTEM OF CHICAGO.

Chicago.

The presence of endemic diseases in this city during the past winter has occasioned considerable alarm; and it is only now that the cause of it is becoming generally known and being publicly discussed. These diseases have generally taken the form of scarlet fever, and several hundred children and a number of adults have died from them; though now the death-rate is greatly reduced, and there is no occasion for further alarm. The doctors have pronounced the disease to be epidemic, but there are those outside of the medical profession who hold that the causes are local and preventable; in other words, that the disease is attributable to sewer-gas. Enteric fevers have not been so prevalent. Considerable excitement was caused by the discovery that these diseases prevailed in one of our large hotels, and that the immediate cause of them was defective sewerage. In this case the proprietor of the house, who was greatly exposed on account of his endeavors to find out the cause of the trouble, died of typhoid fever.

But the defects in our sewers which directly cause disease are easily discernible by those who understand our sewage system and how it is practically executed; and I think that it will be found that the faults are not so much with the system as with the imperfect way in which it is carried out.

The drainage of Chicago has always been beset by natural difficulties, which however it is not impossible to overcome. Any one acquainted with the topography of the city knows that the original surface of the ground — or rather mud — was nearly a dead level ranging from three to six feet above the water of Lake Michigan and Chicago River. The successive raisings of grade — which it is to be hoped are now forever fixed — have brought the streets of the business portion up to fourteen feet above city datum or base line, which is the level of lake water in 1838. This is somewhat less than the grade above the lake at the present time. The sewers, which are from nine to thirteen feet below the present grade, are consequently very nearly on a level, and emptying as they do into the river and the lake, have to travel from a quarter to half a mile to find their outlets from the crowning points. They are put low enough to afford seven and eight feet basements for business buildings.

The system of street and house drainage was devised by E. S. Chesbrough about twenty years ago. Mr Chesbrough is still city engineer, and has seen the system put into operation under his administration. As far as I know, no changes have been made in the general plan. Nearly every street in the city wherein the improvements have made it necessary has a sewer. Until two years ago all the sewers needed had been put down, but since that time the increase of sewers has not kept pace with the growth of the city. This is on account of the unfortunate condition of the city finances. The Department of Public Works is now endeavoring to get appropriations for the sewers still needed, which will cost about $300,000. The level nature of the ground makes the sewers an absolute necessity to preserve the health of the people living on new streets. The public are alive to the importance of this matter above all others; for were Chicago as deficient in sewers as Philadelphia, Baltimore, and other cities, and were they as defective as those of New York, there would be no city here to-day. The extensive system of sewage and the pure lake winds not only preserve it from disease, but maintain it, notwithstanding its disadvantageous topography and other local causes which time will soon efface, as one of the healthiest cities of the whole country.

The street sewers are built either of brick or vitrified drain pipes according to the size required; and not only the streets but many of the alleys are sewered. The grades being so slight, great care is necessary in laying the sewers; and the system of inspection and superintendence over new sewers is thoroughly carried out. The man-holes are close enough to allow the sewers to be dragged. This is done by an apparatus which is carried about in winter, at which time only this work is done. In summer the sewers are cleaned by flushing. An immense tank holding perhaps five thousand gallons is in constant use for this purpose during the summer. Commencing at the crown of each system of sewers, the tank, which is mounted on wheels and drawn by horses, is filled at the nearest hydrant, then placed over a man-hole, and a valve is opened which drops the water in a column two feet in diameter. Then the next man-hole is flushed, and so on to the outlet of each sewer.

At each street intersection there are four catch-basins for street water, all of which are trapped. The streets being on a dead level, the gutters commence to pitch from the middle of each square, and the pitch is entirely given by the depth of the gutter and the contour of the pavement. In the centres of the squares the pavements are nearly level with the sidewalks. The gutters, being deep at the corner crossings, are spanned by plank bridges flush with the sidewalks, and the street pavements are eased up to this level, so that foot passage, where the streets are up to the established grade, is not impeded.

When the sewers are laid in the streets, branch drains are laid to each lot on the recorded maps of the subdivisions of property, and terminate inside of the curbstone line. Records are kept of the position of these inlets, and except in extraordinary cases property-owners are obliged to use them. The destruction of the city maps in the great fire caused great inconvenience in the laying of house-drains where no buildings had been erected previously, and it frequently became necessary to trench the streets to find their location. The same system is carried out by the gas companies and water-department, and thereby much unnecessary work and the damage to pavements in making connections are avoided. The house branches are all laid with six-inch vitrified socket pipes with a grade of one quarter inch to a foot.

The above-mentioned work is all done by contract under the direction of the city engineer. All other work from the curbstone line is done by licensed sewer-builders, all of whom are under bonds. None but these are allowed to build, alter, or clean the private sewers. As the whole underlying soil of this city is permeated with water to a point above the necessary depth at which permanent foundations can be laid, the sewage system includes the surface drainage of the whole area of the city; and as the foundation line is below sewer grade, there is no danger of any properly laid foundation being sapped. Consequently all sewers must be below the surfaces of cellars and above the bottoms of foundations. Private sewers are almost invariably laid with vitrified earthen pipes, though cast-iron pipes are not prohibited. At first pipes with socket joints were used; but finding that it was impossible to compel the sewer-builders in all cases to set the pipes with good struck or rubbed joints on the inside, the Board of Public Works made it a regulation that ring joints only should be used. The pipes were then put together without cement, the rings broken into halves, one half worked up under the joint with cement on the top, the other laid on top in the same way, and the edges then pointed all around. But there has been found to be an objection to this method, arising from the danger of the rings being displaced by digging for water-pipes or any other purpose, in proximity to the drain-pipes. Of late the department has permitted the most careful sewer-builders to use the socket pipes again, and they are now generally used for the best buildings. All sewers, if of six-inch pipes or less, must be laid with a grade of a quarter inch to a foot, but it is permitted to lay nine-inch pipes almost on a level. This is a necessity in many deep buildings. The regulations do not require traps in main house drains or at inlets for soil and waste pipes, but they are not prohibited.

Trapped brick or iron catch-basins are required in the following cases: For the drainage of any yard, area, or cellar. In the latter case a wooden box is laid along the wall through which surface water is likely to penetrate, in which is a common three-inch clay pipe surrounded with clean gravel, the joints being left open to receive the surface water through the gravel. This common clay pipe is connected by means of a tight pipe with the catch-basin, and the catch-basin is discharged behind the trap through a similar pipe into the main drain. It is also required that all kitchen and laundry sinks be discharged through trapped catch-basins located where they can be periodically cleaned. These last should be, and in the best houses are, ventilated by independent pipes, but this is not required by law. Where houses have gravel roofs the leaders must be discharged through catch-basins: these may be trapped or not as the owner elects, but if not trapped must have stone covers set in cement. In business buildings the latter course is generally taken in order to ventilate the sewers through the down spouts. No water-closet or soil pipe is allowed to discharge through a catch-basin. In long house drains it is required that man-holes, either made round like catch-basins, or rectangular, and covered with stone, be placed at proper intervals to permit the drains to be cleaned. In fact, it is contemplated and required that all drains be so placed that they can be cleaned out everywhere. Unfortunately this is a requirement that is too often forgotten. All drains to which pipes are to be attached must be turned up at their outlets.

As will be seen from this outline of our system of house drainage, it is subject to all the dangers inherent in the use of earthen pipes in short lengths with many joints. The use of cast iron would avoid these to a considerable extent, but at a much greater expense. Cast-iron catch-basins would also be an improvement over brick ones, which if in dry soil may leak and lose their water during long-continued spells of dry weather. If this occurs in catch-basins used for surface drainage, the sewer gas may work back and percolate through the surface drain made purposely porous. There is always danger that a building may settle after the drains have been put in, and disrupt them where they pass through the walls. This is as liable to occur with iron pipes as with clay. It is said by some that the holes must not be filled with masonry; but it matters not whether they are so treated or not, for if not filled with masonry, sand or rubbish will fill them, and these being generally incompressible will break the pipes just the same.

But the serious defects of our house drainage are not in the drains, but above them. The sewers are often poorly laid, and the sewer-builders are not altogether blameless; but the plumbers are at fault in nine cases out of ten. The great and fruitful source of unhealthfulness in our houses is found in the connection between plumbers' pipes and sewer-pipes, which are generally made by the plumbers. And the deadly place in every house is the bottom end of the soil-pipe. Here there is no protection from the trap of a

catch-basin, for such is not allowed on this branch. The joints are generally made by setting the soil-pipe into the sewer-pipe, stuffing in paper or rope, and then pointing around with cement. It is easy to see how a joint may be carelessly made, and to how many accidents it is subject. Often these joints are broken by ignorant workmen employed in making repairs, or by the carelessness of other workmen who come after the plumber has set his pipes. The other source of danger in our houses is found in the siphoning of water-closet traps in upper stories, for want of vent-pipes below the traps or continuous soil-pipes to the roof. This system of sewer ventilation now so common in Eastern cities is little practised here. The fault in this case is too often with the architects in making specifications for new work.

The sickness and death which have occurred this winter, though directly caused by defective drainage, have been accelerated by meteorological causes which have made imperfections of our house sewers more evident than usual. After a very rainy autumn continued until the middle of November, cold weather set in, and continued for nearly three months without intermission. In all this time it was noticed that no rain fell and no snow thawed. Practically there was no water shed, and the sewers of the city during this time did not receive their natural flushing. Their only supply was the filth drainage of the city. This conduced to a greater fermentation and larger production of deleterious gases. Where sewers were opened during this period, the pressure of gas was enormous. In one case a sewer-builder reported to me that it was so full of the compounds of hydrogen that it ignited. This condition of affairs made all bad leaks worse, and filled houses with poisonous gases which might have escaped them for years. Another effect was the drying up of numerous catch-basins sufficiently to unseal their traps. Here was a cause of danger little suspected. There are hundreds of catch-basins in this city intended for surface drainage, which ought to be cut off from the main drains, because where they formerly took surface drainage the erection of neighboring buildings has rendered them unnecessary, and getting no water, they soon dry up. The water being below the trap levels, they only serve to disseminate deadly gases through the porous drains with which they are connected.

As every calamity has its lesson, so this one has put the people on their guard against similar dangers in the future, and the result will be a general overhauling of drains and soil-pipes. Unfortunately however there are very few persons who make the defects in their sewers known until they are overpowered by noxious smells or behold actual sickness. A general dissemination of information on the whole subject is what is needed here, so that their defects may be discovered in time by those most interested in them. The State Board of Health of Massachusetts has taken the right course in republishing Dr. Simon's excellent little book on "Filth Diseases and their Prevention"[1] for popular dissemination. Our Board of Health could do nothing better than distribute a cheap edition of this book in pamphlet form gratuitously.

One of the best suggestions that has been made with a view to insuring the community against the possibility of being poisoned by the gas from defective drains is to exhaust the gas by means of special furnaces having tall chimneys, or by those of engine-houses and public buildings, and thereby not only burn the gas, but produce a condition of partial vacuum in the sewers. The only danger from this would be the freezing of well-ventilated soil-pipes by drawing down cold air in winter.

L'INSTITUT DE FRANCE.

The election of M. Charles Blanc some months ago as member of the *Académie Française* created more than the usual amount of criticism and discussion. In commenting on his election the *Builder* was led to give the following history of the *Institut* and its five component academies:—

"The constitution of the Institute, as it is called, is somewhat complex in its construction, and from its earliest days there was an indecision in its regulations. Founded by Cardinal de Richelieu some ten years earlier than our own Royal Society, the *Académie Française* received on Jan. 2, 1635, its letters-patent signed by Louis XIII. Founded a few years later (1648) the Academy of Painting and Sculpture, as it was then called, was, properly speaking, the oldest of all the French academies; for as early as the fourteenth century we find traces of the existence of an association of this nature, and the society of St. Luc had existed some time previously. In 1655 the society was definitely constituted by Cardinal Mazarin, and in 1671 the far-seeing minister Colbert instituted the Academy of Architecture. Founded in 1666, also by this minister, the Academy of Sciences only received the approbation of his royal master in 1699. The Academy of Inscriptions and *Belles Lettres* then followed, composed at its foundation in 1663, of four members chosen by Colbert; the business of this body was to prepare and write inscriptions for whatever monuments might be erected or medals struck in honor of their august master.

"These four academies created in the seventeenth century existed just as our English bodies of the same nature do at the present moment, each as a separate corporation, having no connection with each other; and thus they continued to exist till the period of the French Revolution, which entirely broke up their constitutions, and formed, *by their union*, the body now called the Institute.

"Suspected of monarchical sentiments, in 1793 the *Académie Française* was suppressed, but two years later was re-constituted, when, in 1795, the law of the 25th of October founded the modern Institute. In the beginning this was composed of simply three classes, — the academy of sciences; the class of moral and political sciences, analogous to the present academy of the same name, and to a portion of that of the inscriptions and *belles lettres;* lastly, the third class, that of literature and the fine arts, embracing what we should now call the *Académie Française*, the Academy of the Fine Arts, and that of Inscriptions and *Belles Lettres*.

"Once established, the convention gave to the Institute the power of naming the forty-eight members who were again to select the other ninety-six. By the law of 1796 it was decreed that the Institute should be composed of one hundred and forty-four members residing in Paris, of an equal number of associates chosen from the whole of the republic, to whom may be added, as corresponding members, twenty-four foreign *savants*, eight to each class. When chosen, the Institute was installed in the Louvre.

"Under the laws of 1795 and 1796 the Institute enjoyed much liberty; and hence it was that Napoleon, then First Consul, determined a change. In 1803 was passed a law by which the election of any member had to be approved by the head of the executive power. This arrangement is still kept up. A second article increased to four the number of classes, admitting this time history to a full share of honor, and separated more markedly the different other branches.

"In 1806 the Institute, which since its commencement had borne the title of *Institut National*, took the name of *Institut de France*, but it was not till 1811 that it bore that of the *Institut Impérial*. This latter is now no longer in use, and it is again called the *Institut de France*.

"The approaching days of the restoration were, however, to bring mishap on the Institute; and during the first years of the Bourbon's reign, the work of the Convention was erased, and the old academies of Louis XIV.'s time were re-established. Henceforth the mere protection of the Duc de Berry or the Duc d'Angoulême sufficed to procure an entry to the Academy. Indeed, in 1816 no less than twenty-two members were expelled from the Institute, among whom were to be found the well-known names of David, La Ranal, Sièyes, Monge, and Carnot. The revolution of 1830 brought better days to the Institute, though the government of Louis Philippe determined to leave to time the care of arranging the difficulties that had arisen. In 1832 M. Guizot, then minister of public instruction, recreated the class of the moral and political sciences, giving thus a place to philosophy, to legislation, political economy and statistics. For a long time, however, the spirit of sect pursued the elections to the Institute; and thus we find, during the reign of Cousin over philosophy, none but those who entirely agreed with his views entered the sacred pale. From that time to this, the Institute has enlarged both in science and reputation.

"Thus what is now called the Institute is composed of these five academies, — the French Academy, the Academy of Sciences, the Academy of Inscriptions and *Belles Lettres*, the Academy of Fine Arts, and the Academy of Moral and Political Sciences: these sit at the well-known building opposite the Louvre, on the other side of the Seine, at the building called the Palais de l'Institut, or the Palais Mazarin.

"Of these the *Académie Française*, of which M. Charles Blanc has just been elected a member, is composed of forty members (called popularly the forty *immortals*). They are nominated by election, and the candidates can alone arrive at the position by a personal solicitation; and after this their nomination is submitted to the chief of the executive power, just as in England her Majesty gives her consent to the election of an Academician.

"It may be remembered that one of the chief works of this *Académie Française* is the preparation of the famous Dictionary of the French Academy, the first edition of which appeared in 1694, and the sixth and last in 1835. Until the present century the French Academy, like the Della Crusca of Florence, confined its labors to the preservation of the language; since then, and for the last half-century, it has been opened to all comers in science and art.

"The Academy of Sciences, which at the Revolution took the first place among the classes then instituted, is composed of sixty-five members, divided into eleven sections; each of these counts six members, with the exception of the geographical, which has only three; in addition to these, there are two perpetual secretaries, ten free members, eight foreign associates, and a large number of French and foreign corresponding members.

"The Academy of Inscriptions and *Belles Lettres* is composed of forty members and ten free members, its chief work being connected with history and archæology.

"The Academy of Fine Arts, which received its present name at the time of the Revolution, when the Academy of Architecture was added to it, is composed, like our own Royal Academy, of forty

[1] "Filth Diseases and their Prevention," by John Simon, M.D., F.R.C.S. Printed under the direction of the State Board of Health of Massachusetts. Boston: James Campbell, 1876.

members; it is, however, divided into five sections, — painting, sculpture, architecture, engraving, and music. It is this academy which directs the various competitions, distributes the annual *grands prix de Rome* in the five sections, presents candidates for the post of professor to the schools of art, and in many other ways directs the fine arts of the country.

"The Academy of Moral and Political Sciences, founded in 1795, was suppressed by Napoleon in 1803; nor was it till the reign of Louis Philippe in 1832, that it was re-established by the advice of M. Guizot. It is composed of fifty members, and is divided into five sections; in addition there are five foreign associates, and a number of corresponding members."

ARCHITECTS AND THE PUBLIC.

New York, March 31, 1877.

Editor of the American Architect and Building News.

Sir, — In your paper of March 24 you speak of the English architectural journals as having hinted at "an antagonism between the profession and the public." From your general remarks on matters of the architectural profession, one may infer that the American public feel no better towards it. Is it not quite natural that it is so?

The conditions prescribed for the competition of the West Virginia State House, for the first and second competitions of the Indiana State House, for the Fraser Institute of Montreal, and numerous other instances, give evidence that the public has a very low opinion of architects.

One would suppose that a feeling of self-respect would have restrained the members of the profession from sending designs; but the result has shown that there is very little of this feeling in the profession. Recently a limited and paid competition took place in this city; as soon as it became known that a *job* was in the market, the members of the Building Committee were fairly run down with applicants who offered to prepare plans free of charge. I venture to predict, that when these gentlemen wish to build again they will think it foolish to offer any compensation for competition plans. There will be more than enough of the hungry wolves after the prey.

Let it be known that a piece of property has been bought with a view of building, and a run of the professionals is sure to follow: hence the contempt of the public.

The saddest thing in these scrambles for *jobs* is, that it is not confined to the lesser lights, but is participated in by a few who are quite prominent, and whose worldly position is such that they could await a client with dignity.

The professions and pretensions of some members of the American Institute of Architects are a sham and a fraud. In conclusion, permit me to allude to the pernicious practice of most architects of constant fault-finding with the work of others. A builder remarked to me the other day, that he did not believe that backbiting prevailed so generally in any other calling as in that of the architects.

In a discussion in the Albany Senate the other day, one of the senators, Mr. Gerard, remarked that architects were always quarrelling.

Very respectfully, Croaker.

NOTES AND CLIPPINGS.

A Suit for Architects' Fees. — The trial of the case of Arthur Gilman against Mrs. Paran Stevens was concluded in Part I. of the Superior Court on the 30th ult. The plaintiff, who is an architect, sued to recover about $15,000 for professional services in the preparation of plans for a building which was to have been erected at Thirty-Seventh Street and Fifth Avenue, and about $750 as a balance due for work on the plans of the Stevens apartment-house. In regard to the first claim, Mrs. Stevens insisted there had been no contract. She also set up a counter-claim of $20,000, the alleged excess in the cost of the apartment-house, which she averred was due to the plaintiff's negligence. The trial of the suit was begun on the 21st inst., and the case was given to the jury on Thursday last. The jurors, failing to agree, were locked up for the night, and yesterday morning brought in a verdict for $3,000 in favor of the plaintiff.

The Statue of America. — The bronze statue "America," which is to surmount the Soldiers' Monument in Boston, has just been completed by Messrs. Robert Wood and Co. of Philadelphia. The figure is of heroic size, 13 feet high, and weighs 5,300 pounds. The artist is Mr. Martin Milmore. The statues of the American Soldier and the American Sailor, intended for the base of the same monument, were also cast by Messrs. Robert Wood & Co. and are now awaiting transportation.

Fall of a Building. — A two-story brick house on Cameron Street, in Alexandria, Va., occupied by a family named Boswell and a maiden lady named Padgett, fell in the night of the 2d inst. One of two brothers sleeping in a bed was instantly killed: all the other members of the household were injured.

Burglar-proof Construction. — A bank-building and safe-depository is now being built in Milwaukee, and in the construction of its vaults the floors, walls, and tops are made of two thicknesses of rail-road rails: the whole is surrounded by heavy stone walls.

The Saratoga Monument. — The Saratoga Monument Association have already adopted a design for a monument, but are prevented from carrying out their plans from the want of funds. The Legislature of the State made, in 1874, an appropriation of $50,000 toward the erection of this monument, but under such conditions that no benefit can be derived from it without additional legislation. A petition to the Legislature to grant such aid as will insure the laying of the corner-stone on the approaching centennial anniversary of the surrender has been prepared and generally signed.

The Bennington (Vt.) Monument. — The Committee on Federal Relations of the Massachusetts Legislature has reported a resolve appropriating a sum not exceeding $5,000 to aid in the erection of a monument in commemoration of the battle of Bennington, to be paid the treasurer of the association; provided that it shall not be paid until plans for the monument have been approved by the governor, and other sums received large enough to make the erection of the monument certain.

The Douglas Monument. — Should the Douglas Monument, which has stood untouched for some ten years, ever be finished in accordance with the original plan, as modelled by Leonard W. Volk, it will be 100 feet high, with a circular base 52 feet in diameter, the tomb having a diameter of 20 feet. The sarcophagus, which occupies the centre of an arched chamber 10 feet high, is of white marble. On pedestals at four of the faces of the octagonal base will be figures representing Illinois, Commerce, History, and Arts and Sciences. The sides will be ornamented with bronze bas-reliefs, and the whole structure will be surmounted by a column 48 feet high supporting a bronze statue of Douglas. The first appropriation by the Illinois Legislature of $25,000, was made in 1863, and was used to obtain the site; since that time various bills appropriating sums of money for the completion of the monument have been defeated. What has been expended upon the monument up to the present time, some $12,000, has been raised by private subscription.

The Chicago Court House. — Bills for the following amounts have been audited and paid for work thus far done upon the Cook County Court House: —

Excavating	$5,600
Foundations	92,000
Plans and specifications	30,000
Cut stone	25,000
Granite	40,000
Total	$192,600

This is exclusive of Harms's claim, and also of the hire of laborers and superintendents. All that the county has to show for the money is the foundation, which was contracted to be built for $84,000.

Theatre Stairs. — It is said that the Lord Chamberlain has determined to grant no license to a theatre in which wooden stairs are used; and he will insist that such stairs shall be replaced by stone or iron stairs.

The Fiscal Appropriation for the Louvre. — One hundred and thirty thousand dollars have been appropriated by the French government for the running expenses of the Louvre during the ensuing year; an amount which, in the opinion of the *Chronique*, puts that national institution in "a flagrant state of inferiority," when compared with the similar institutions of Russia, England, and Germany. The Director of the Fine Arts and the Director of the National Museums, however, seem to have exerted themselves successfully in the matter of obtaining an increase; for the latest news from Paris is to the effect that a sub-committee on the budget has been conferring with those gentlemen, and has engaged to recommend a further appropriation of fifty thousand dollars.

Russian Mound-Builders. — The Russian Government having refused to enact a law by which all the *koorgans*, or ancient and prehistoric grave-mounds which abound in Russia, should be proclaimed the property of the state, a private society is now forming for the purpose of negotiating with proprietors of land for grants of property on the *koorgans*, and undertaking a series of scientific explorations of the mounds.

Christian Church in Algeria. — The oldest existing Christian church in the world is possibly one at New Orleansville (the Oppidum Tingitten of the ancients) in Algeria. In the pavement is a stone with an inscription stating that it was built in the year 328 A.D., soon after the conversion of Constantine. Several portions of the building are still in good repair.

A Centenarian Brickmaker. — James Norris of Saltburn-by-the-Sea, England, is now in his 103d year, and still earns his living by his trade. On the occasion of his 102d birthday, March 14, 1877, he managed to load and wheel a barrow in which were twenty-three unbaked bricks, the weight of which, without the barrow, was 200 pounds.

Drawing the Charge of a Shell. — Four hundred and one rounds were fired during some recent artillery experiments in England. At the close a shell that was fired, but did not explode, — a one hundred and eighty pounder, — lay on the beach. To deprive it of any power of mischief by any attempt to unload it, a small four-ounce charge of gun-cotton was placed on top of the shell, and exploded, cracking the shell without exploding the powder within.

Prehistoric Remains. — In the coal shale at Wezikon, Switzerland, a series of painted fir poles covered with wicker-work have been found. They are supposed to belong to the epoch between the two glacial periods.